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**ADMINISTRATIVE INFORMATION****Support** - Chang Gung University of Science and Technology.**Review Stage at time of this submission** - Data analysis.**Conflicts of interest** - None declared.**INPLASY registration number:** INPLASY202480089**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 19 August 2024 and was last updated on 19 August 2024.**INTRODUCTION**

**Review question / Objective** To explore the impact of different endotracheal tube fixation methods on the occurrence of events in intubated patients, and to provide recommendations for the practical application of endotracheal tube fixation methods.

**Condition being studied** Endotracheal tube insertion and ventilator use are common treatments in acute and critical care units. Currently, there are many ways to fix endotracheal tubes in clinical practice, including adhesive tape fixation or cotton knot fixation. Or using an endotracheal tube fixator is to prevent the endotracheal tube from slipping, which is necessary to maintain the normal position of the artificial airway and protect life. There is currently a lack of research and analysis that provides sufficient evidence on the impact of endotracheal tube fixation methods on endotracheal tube displacement, the number of unplanned extubation events, and the number of skin and mucosal injury events.

**METHODS**

**Search strategy** A comprehensive literature search will be conducted with seven electronic databases, including Cochrane Library, PubMed, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Web of Science, Embase, Chinese Electronic Periodical Services (CEPS), China National Knowledge Infrastructure (CNKI) from their inception until June 2024. A manual search will be performed to retrieve additional records from the reference list of included studies and relevant review papers.

**Participant or population** The participants were patients who were 18 years old or older, who were treated with oral endotracheal tube and received mechanical ventilatory support.

**Intervention** The use of endotracheal tube securement techniques, include twill, twill tape, cotton tape, gauze roll, bandage, adhesive tape, endotracheal holder, suture.

**Comparator** Not available.

**Study designs to be included** Randomized controlled trials (RCTs) and Quasi-experimental Study.

**Eligibility criteria** Studies with the following characteristics were included: (1) The study type was randomized controlled trials (RCTs) and quasi-experimental Study. (2) The participants were patients who intubated with oral endotracheal tube.

Studies with the following characteristics were excluded: (1) lack of clinical outcomes relevant to the research question; (2) Some of studies like qualitative researches, case reports, animal studies, reviews and statement. (3) Also keep out some studies on cadavers.

**Information sources** Electronic databases as Cochrane Library, PubMed, Cumulative Index to Nursing and Allied Health Literature(CINAHL), Web of Science, Embase, Chinese Electronic Periodical Services (CEPS), China National Knowledge Infrastructure(CNKI) and Reference list of included studies and relevant review papers.

**Main outcome(s)** Incidence of endotracheal tube displacement, endotracheal tube displacement distance, incidence of unplanned extubation, incidence of pressure injury, incidence of skin, mucosal injury, oral hygiene, and Oxygen saturation levels.

**Quality assessment / Risk of bias analysis** The included studies will be appraised using the Cochrane Risk of Bias Tool 2.0 by two independent reviewers. The evaluation contents focus on randomization process, allocation concealment, blinding, completeness of the outcome data, selective reporting, and other source of bias. Additionally, the GRADE scoring system will be used to evaluate the quality of evidence for significant outcome indicators. The included studies will be appraised using the Cochrane Risk of Bias Tool 2.0 by two independent reviewers. The evaluation contents mainly include focus on : Randomization process distribution method, allocation concealment, Blinding method, completeness Integrity of the resulting outcome data, Sselective reporting of results, and Oother source of bias. Additionally,nd we use the GRADE scoring system will be used to evaluate the quality of evidence for significant outcome indicators.

**Strategy of data synthesis** The outcomes will be analyzed and described qualitatively. If the data allows, a meta-analysis will be conducted to quantitatively synthesize the results.

**Subgroup analysis** No subgroup analysis is planned at this stage, but it may be considered if relevant subgroups emerge during the data analysis.

**Sensitivity analysis** No sensitivity analysis has been planned at this stage.

**Language restriction** Articles written in English, Traditional Chinese, and Simplified Chinese will be included in the review. Articles written in English, traditional Chinese, simplified Chinese will be considered.

**Country(ies) involved** Taiwan.

**Keywords** oral endotracheal tube, unplanned extubation, securement.

#### **Contributions of each author**

Author 1 - Chen Jin Liao - Conceptualization, drafted the research question and study design. Conducted search literature, data extraction and interpretation of data. Prepared tables and original draft the main manuscript text.

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Author 2 - Li-Fen Chao - Conceptualization, aspects of the research studies and the manuscript text preparation, writing review & editing.

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